WHAT IS CLAIMED IS:

1. A method of identifying a boundary condition between components of an object of analysis, the method comprising the steps of:

calculating natural frequencies or resonance frequencies of finite-element method models and calculated mode vectors by using the finite-element method models for analysis which include an object of analysis including a plurality of components and a plurality of elements which are positioned between the components of the object of analysis and indicate a boundary condition between the components;

extracting a calculated mode vector having a high degree of correlation for an experimental mode vector obtained in an experiment; and

identifying the boundary condition of the elements based on the extracted calculated mode vector and the natural frequency or the resonance frequency corresponding to the extracted calculated mode vector.

2. A method of identifying a boundary condition between components of an object of analysis according to claim 1, wherein the step of extracting the calculated mode vector comprising the steps of: determining a degree of correlation at least one time by residual degrees of freedom when the degrees of freedom giving the large degree of correlation during

elimination from arithmetic operation are eliminated n numbers at a time; and extracting the calculated mode vector having the large number of residual degrees of freedom when the degree of correlation exceeds a threshold as the calculated mode vector having the high degree of correlation for the experimental mode vector.

3. A method of identifying a boundary condition between components of an object of analysis according to claim 1, wherein the step of calculating natural frequencies or resonance frequencies and calculated mode vectors comprising the steps of: defining a plurality of conditions for each of the elements and a plurality of levels for each of the plurality of conditions; and calculating the natural frequencies or the resonance frequencies of the finite-element method models and the calculated mode vectors by adopting an experimental design.

4. A method of identifying a boundary condition between components of an object of analysis according to claim 1, wherein a mode reducing model of a single component in which the mode vector up to a necessary frequency band is adopted is used as the component of the finite-element method model.

5. A method of identifying a boundary condition between components of an object of analysis according to claim 1, wherein the step of identifying the boundary condition comprising the steps of: performing an arithmetic operation for an evaluation value indicating an error between the experiment

and the calculation for each of a plurality of conditions based on the extracted calculated mode vector and the natural frequency or the resonance frequency corresponding to the extracted calculated mode vector; and identifying the boundary condition of the elements so that the evaluation value is minimized.

6. A method of identifying a boundary condition between components of an object of analysis according to claim 1, wherein the step of identifying the boundary condition comprising the steps of: identifying the boundary condition between the components by using a spring between the components as elements contained in the finite-element method models to identify a spring constant of the spring between the components.

7. A recording medium, wherein a control program for executing a method of identifying a boundary condition between components of an object of analysis according to claim 1 with a computer is recorded.

8. A computer program for executing a method of identifying a boundary condition between components of an object of analysis according to claim 1.